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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* AKIRA ICHIKAWA  
and KATSUHISA TAGUCHI

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Appeal 2008-0600  
Application 09/830,605  
Technology Center 1700

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Decided: September 19, 2008

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Before ADRIENE LEPIANE HANLON, PETER F. KRATZ, and  
CAROL A. SPIEGEL, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of claims 1, 2, and 4-14, all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

The Examiner finally rejected claims 1, 2, and 4-14 under 35 U.S.C. § 103(a) as unpatentable over the combination of Tanimura<sup>1</sup> and an admission in the "Background Art" section of the Appellants' Specification.<sup>2</sup> Final 2-3.<sup>3</sup>

B. ISSUE

Whether the Appellants have shown that the Examiner reversibly erred in rejecting claims 1, 2, and 4-14 under 35 U.S.C. § 103(a) as unpatentable over the combination of Tanimura and the admission in the "Background Art" section of the Appellants' Specification.

C. FINDINGS OF FACT

The following findings of fact are believed to be supported by a preponderance of the evidence. Additional findings of fact as necessary appear in the Analysis portion of the opinion.

1. Claimed subject matter

The claimed subject matter is directed to a contactless data carrier adhesive label. There are four independent claims on appeal, claims 1, 8, 10, and 12. Claim 1 is representative of the issue on appeal and reads as follows:

An adhesive label comprising

- (1) a circuit substrate;
- (2) an entire data carrier element for a contactless data carrier system containing an IC chip, said data carrier being carried on at least one surface of said circuit substrate, and said IC chip being carried on only one surface of said circuit substrate; and

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<sup>1</sup> US 6,065,701 issued to Tanimura et al. on May 23, 2000 ("Tanimura").

<sup>2</sup> Pages 1 and 2 of the Appellants' Specification.

<sup>3</sup> Final Office Action mailed August 15, 2006 ("Final").

(3) an adhesive layer on said data carrier element containing said IC chip,  
wherein said circuit substrate, said data carrier element containing said IC chip, and said adhesive layer are sequentially laminated, and  
said adhesive layer is in direct contact with said data carrier element containing said IC chip and is suitable for application to an article, when said adhesive label is applied to an article, said adhesive layer comes into direct contact with the surface of the article.

App Br. 25,<sup>4</sup> Claims Appendix.

## 2. Appellants' admission

The Appellants disclose a conventionally used adhesive label-type data carrier in Figure 3. Appellants' Figure 3 is reproduced below:

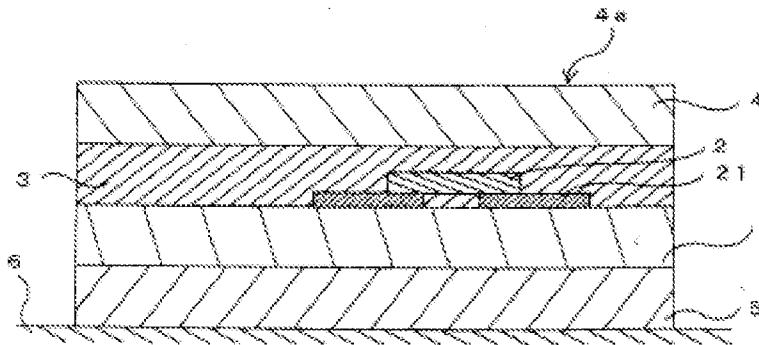


Figure 3 depicts a prior art adhesive label.

The Appellants describe the embodiment illustrated in Figure 3 as follows:

As shown in Fig. 3, a typical conventionally used adhesive label-type data carrier has a structure such that a contactless data carrier element mounted on a surface of a circuit substrate 1 is sealed with a resin layer 3, and a surface layer 4 is laminated on the resin layer 3. The contactless data carrier element contains, for example, an electric circuit 21 and

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<sup>4</sup> Appeal Brief dated April 16, 2007 ("App. Br.").

electronic components 2 such as an IC chip, a capacitor, a battery and so on. In general, an entire contactless data carrier element is formed on one side of the circuit substrate 1, as shown in Fig. 3. Alternatively, the contactless data carrier element may be prepared by separately forming a part of an electric circuit on each side of the circuit substrate 1, and connecting one to the other via a through-hole, to thus integrate the separately formed parts into a sole contactless data carrier element.

Further, as shown in Fig. 3, an adhesive layer 5 is provided on a reverse side of the circuit substrate 1 of the adhesive label-type data carrier. The adhesive label-type data carrier is temporarily applied on a release sheet (not shown). When employed, the adhesive label-type data carrier is peeled therefrom, and applied to a surface of an article 6. In such an adhesive label, a mark for identification and so on is generally printed on a label surface 4a, i.e., a surface 4a of the surface layer 4.

Spec. 1:21-2:16.

### 3. Tanimura

Tanimura discloses a cassette label for a video tape cassette that is capable of recording information relating to the recorded video data.

Tanimura 1:8-11.

Tanimura Figure 2 illustrates an embodiment of the cassette label. Tanimura 3:16-17. Tanimura Figure 2 is reproduced below:

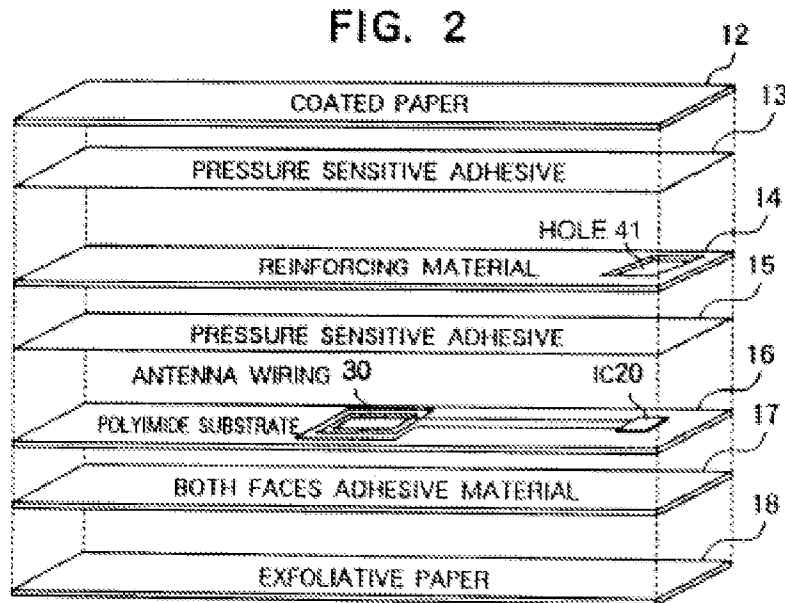


Figure 2 depicts a cassette label.

#### D. PRINCIPLES OF LAW

A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007); *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

Facts relevant to a determination of obviousness include (1) the scope and content of the prior art, (2) any differences between the claimed invention and the prior art, (3) the level of skill in the art, and (4) any relevant objective evidence of obviousness or non-obviousness. *KSR*, 127 S. Ct. at 1734, *Graham*, 383 U.S. at 17-18.

A person of ordinary skill is also a person of ordinary creativity, not an automaton. *KSR*, 127 S. Ct. at 1742. One of ordinary skill in the art is

presumed to have skills apart from what the prior art references expressly disclose. *See In re Sovish*, 769 F.2d 738, 742 (Fed. Cir. 1985).

The question under 35 U.S.C. § 103 is not merely what the references teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. All disclosures of the prior art must be considered. *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976).

“[A]n applicant relying on comparative tests to rebut a prima facie case of obviousness must compare his claimed invention to the closest prior art.” *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).

In order for a showing of “unexpected results” to be probative evidence of non-obviousness, it falls upon the applicant to at least establish: (1) that there actually is a difference between the results obtained through the claimed invention and those of the prior art; and (2) that the difference actually obtained would not have been expected by one skilled in the art at the time of invention. *In re Freeman*, 474 F.2d 1318, 1324 (CCPA 1973).

#### E. ANALYSIS

The Examiner found that Figure 2 of Tanimura shows an adhesive label having an antenna 30 and an integrated circuit (IC) 20 formed on one side of a substrate 16. Adhesive layer 17 adheres the label to a video cassette tape. Ans. 3.<sup>5</sup>

The Examiner found that Tanimura does not teach that the data carrier element, i.e., antenna 30 and IC 20, is laminated between the substrate 16 and the adhesive layer 17. Ans. 3.

The Examiner found that the Appellants have admitted in the "Background Art" section of the Specification that an entire contactless data

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<sup>5</sup> Examiner's Answer mailed June 15, 2007 (“Ans.”).

carrier element may be formed on one side of a circuit substrate or, alternatively, that a contactless data carrier element may be prepared by separately forming a part of an electric circuit on each side of the circuit substrate and connecting the parts via a through-hole to integrate the separately formed parts. Ans. 3. The Examiner continues:

The examiner interprets applicants' admission as a whole rendering obvious that the electronic components of the data carrier element may be formed on either side of the circuit substrate entirely or partially, and the alternative arrangements functions [sic, function] equivalently, because a specific side of substrate is not required for placing the electronic components.

Ans. 3.

Relying on the Appellants' admission, the Examiner concluded that it would have been obvious to one of ordinary skill in the art to position the entire data carrier element in Tanimura on the side of the substrate that is in direct contact with the adhesive layer 17. Ans. 3-4.

According to the Appellants, their admission, "when fairly characterized, is that a part of an electric circuit may be formed on each side of a circuit substrate, and when those parts are connected to form an electric circuit, they may be integrated into a sole contactless data carrier element, where the electric circuit spans both sides of the substrate." App. Br. 12-13. The Appellants argue that the Examiner misinterpreted the admission "to mean that 'it is known [in the] art that the data carrier element containing IC chip can be formed on either side of substrate and functions equivalently (sic).'" App. Br. 13. Without the Examiner's interpretation of the admission, the Appellants argue there is nothing in the record establishing that the claimed subject matter would have been obvious. App. Br. 17.



The Examiner did not misinterpret the admission in the "Background Art" section of the Appellants' Specification. Rather, the Examiner relied on the admission to establish the obviousness of forming the IC chip on either side of a circuit substrate. Ans. 3.

According to the Appellants' admission, it was known to form an entire contactless data carrier element on one side of a circuit substrate and an adhesive layer on the other side of the circuit substrate, wherein the adhesive layer was applied to the surface of an article. It was also known to form part of an electric circuit on each side of the circuit substrate and connect one to the other via a through-hole to integrate the parts into a sole contactless data carrier element. Spec. 1:21-2:14; Appellants' Figure 3.

We find that the Appellants' admission reasonably suggests the interchangeability of forming data carrier elements, such as an electric circuit or an IC chip, on either side of a substrate.<sup>6</sup> *See In re Fout*, 675 F.2d 297, 301 (CCPA 1982) (an express suggestion to substitute one equivalent for another need not be present in the prior art to render such substitution obvious).

Furthermore, we find that one of ordinary skill in the art would have recognized that forming an entire contactless data carrier element on the side of the circuit substrate adjacent to adhesive layer 5 in Appellants' Figure 3 would reduce the number of layers in the adhesive label and reduce production costs. Thus, we find that one of ordinary skill in the art would have been motivated to form an entire contactless data carrier element on the

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<sup>6</sup> The record establishes that a contactless data carrier element contains, for example, an electric circuit and electronic components, such as an IC chip, a capacitor, a battery, and an antenna. Spec. 1:25-28; Tanimura 4:14-26.

adhesive side of the circuit substrate illustrated in Appellants' Figure 3 for economic reasons. *In re Thompson*, 545 F.2d 1290, 1294 (CCPA 1976) (economic factors alone would have motivated the skilled artisan to improve the prior art method).

The Appellants argue that the prior art does not disclose an IC chip or a data carrier formed on a surface of a substrate and coated with adhesive. App. Br. 17. To the contrary, Tanimura discloses that an IC chip 20 is in contact with an adhesive layer 15. Tanimura Figure 2; *see also* Tanimura 3:45-50.

The Appellants also argue that the prior art does not disclose or teach an IC chip or a data carrier in direct contact with an adhesive layer as recited in the claims on appeal. App. Br. 17, 18.

We recognize that the IC chip 20 in Tanimura is not formed on the side of the circuit substrate recited in claim 1, and thus, is not in contact with the adhesive layer that comes into direct contact with the surface of an article when the label is applied to the article. *See* Appellants' claim 1. Nonetheless, the Examiner explains:

[S]ince the admitted prior art renders obvious that the entire data carrier element may be formed on either side of the circuit substrate, and either Tanimura or Fig. 3 of admitted prior art shows that an adhesive layer is laminated to the circuit substrate, it is unseen how the adhesive layer would not be in direct contact with the entire data carrier element when an obviously functionally equivalent alternative structure (i.e., the entire data carrier element is placed on the side of circuit substrate facing the adhesive layer) is employed.

Ans. 6; *see also* Tanimura Figure 2 (illustrating an adhesive layer formed on both sides of a circuit substrate); Appellants' Specification 2:8-10 (disclosing an adhesive layer 5 formed on the side of the circuit substrate

that comes into direct contact with the surface of an article when the label is applied to the article).

The Appellants have failed to direct us to any evidence demonstrating that the Examiner's position is erroneous. Thus, based on the record before us, we find that one of ordinary skill in the art would have understood that when a data carrier element is formed on the adhesive side of the substrate, i.e., the side of the substrate adjacent to adhesive layer 5, illustrated in Appellants' Figure 3, the data carrier element would be in contact with an adhesive layer.

We conclude that the claims on appeal are prima facie obvious over the combination of Tanimura and the admission in the "Background Art" section of the Appellants' Specification. We now turn to the Appellants' objective evidence of non-obviousness.

The Appellants rely on a Declaration under 37 C.F.R. § 1.132 of Masateru Yamakage dated June 12, 2006, to show unexpected results of the claimed adhesive label.

According to the Declaration, Mr. Yamakage compared the printability of four adhesive labels in experiments labeled "Experiment A" and "Comparative Experiments A-C." Yamakage Declaration 4-5. Comparative Experiments A-C are said to represent the closest prior art. App. Br. 19, 23.

The adhesive labels are illustrated in Figures A and B in the Yamakage Declaration. Figures A and B are reproduced below:

Fig. A (Experiment A)

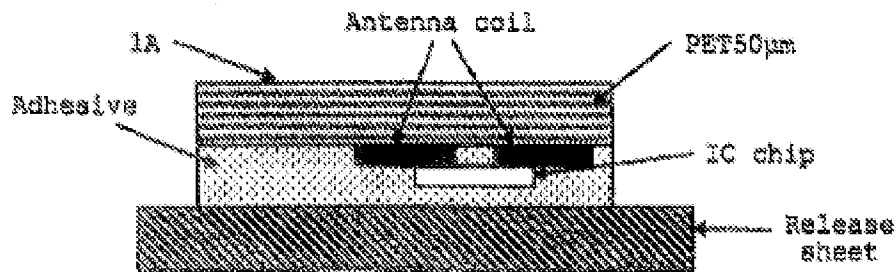


Figure A depicts an adhesive label.

Fig. B (Comparative Experiments A-C)

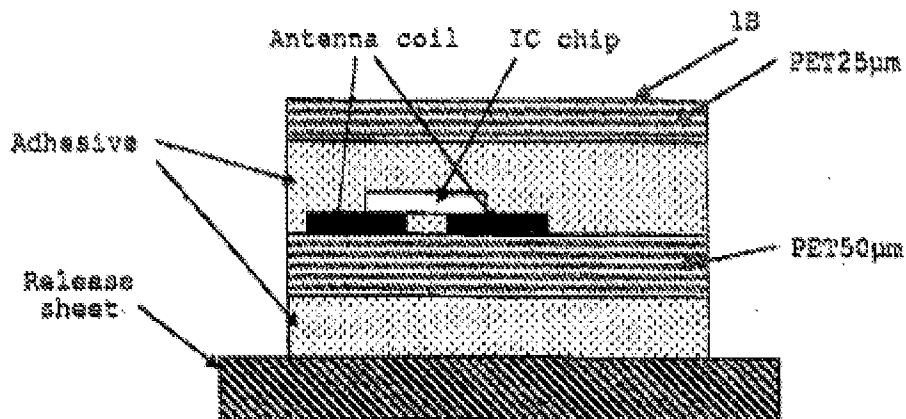


Figure B depicts an adhesive label.

The thickness of the adhesive layer in contact with the contactless data carrier element in Comparative Experiments A, B, and C was 46μm, 124μm, and 228 μm, respectively. All other variables remained the same in the Comparative Examples. *See Yamakage Declaration 2-3.*

According to the results reported in the Yamakage Declaration:

- (1) the printability of Experiment A resulted in no defaced printing, no distorted printing, but a pin hole partially occurred;
- (2) the surface portion that was protruded due to the presence of the IC chip was not printed at all in Comparative Experiments A and B; and
- (3) the printability of Comparative Experiment C resulted in no defaced printing, no distorted printing, or no pin hole.

Yamakage Declaration 5, Table 1.

The Appellants recognize that the best printability was obtained in Comparative Experiment C. However, the Appellants argue that the thickness between the PET (polyethylene terephthalate) circuit substrate and the PET surface layer must be increased to reduce any influence of irregular or uneven structure of the contactless data carrier element, and thus, the entire thickness of the adhesive label must be increased. App. Br. 20-21. In contrast, the Appellants argue that the claimed adhesive label (Experiment A) exhibits “superior printability in combination with its thinness” (underlining omitted). Reply Br. 6.<sup>7</sup>

Significantly, the Appellants have failed to direct us to any evidence establishing that the results reported in the Yamakage Declaration would have been “unexpected” by one of ordinary skill in the art. *Freeman*, 474 F.2d at 1324. For example, we find that one of ordinary skill in the art would have expected the printability of the PET surface layer to be affected by the side of the substrate on which the contactless data carrier element is formed, i.e., the side of the substrate facing toward the printer (Comparative Experiments A-C) or the side of the substrate facing away from the printer (Experiment A). As for forming the contactless data carrier element on the

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<sup>7</sup> Reply Brief dated July 31, 2007.

side of the circuit substrate facing toward the printer, we find that one of ordinary skill in the art would have expected the printability of the PET surface layer to improve as the distance between the contactless data carrier element and the PET surface layer increases. *See* Comparative Experiments A-C.

We also note that the thickness of the PET surface layer in Comparative Experiments A-C (25  $\mu\text{m}$ ) is half the thickness of the PET surface layer in Experiment A (50  $\mu\text{m}$ ). *See* Figures A, B. Although the Appellants argue that Comparative Experiments A-C represent the closest prior art, the Appellants have failed to direct us to any evidence establishing that the thicknesses of the layers in Comparative Experiments A-C represent the layer thicknesses of the closest prior art. *De Blauwe*, 736 F.2d at 705. Indeed, neither Tanimura nor the "Background Art" section of the Appellants' Specification identifies the thickness of the adhesive layer in contact with the contactless data carrier element or the thickness of the surface layer.

Considering the facts upon which the prima facie case of obviousness is based in combination with the objective evidence of non-obviousness, the Appellants have failed to show that the Examiner reversibly erred in rejecting claims 1, 2, and 4-14 under 35 U.S.C. § 103(a) as unpatentable over the combination of Tanimura and the admission in the "Background Art" section of the Appellants' Specification.

#### F. DECISION

The rejection of claims 1, 2, and 4-14 under 35 U.S.C. § 103(a) as unpatentable over the combination of Tanimura and the admission in the "Background Art" section of the Appellants' Specification is affirmed.

Appeal 2008-0600  
Application 09/830,605

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (2008).

AFFIRMED

qsg

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